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Examiner Metzmaier

REMARKS/ARGUMENTS

Claim and specification amendments

The title, summary of the invention and claims have been amended to add reference to a method of using the solvent system. Claim 1 is amended to include part of the limitations of claim 7, namely to add the reference to an aqueous acid comprising water and acid. New claims 23-29 are added that are directed to a method of using the solvent system for acidizing and cleaning up a well.

Claim 9 is objected to on the basis of faulty dependency (dependence on claim 10).

Claim 9 has been amended to depend from claim 8.

Claim 18 is objected to as being a duplicate of claim 6.

Claim 18 has been cancelled. Claims 7, 15 and 18-22 have been cancelled as well as being redundant, and claim 16 is amended to depend on claim 14.

Claims 1-6, 10 and 18 are rejected under 35 USC 102 as being anticipated by US patent no. 5,674,923 of Subbaraman et al. Applicants respectfully traverse this rejection. Subbaraman et al deals with inks, and is irrelevant to the use of solvents in oil and gas wells. Subbaraman also does not refer to use of an acid as claimed in all pending claims.

Claims 1-8, 10, 18 and 20-21 are rejected under 35 USC 102 as being anticipated by Wipf AG. Applicants respectfully traverse this rejection. Wipf AG deals with recovery or recycling of waste solvents in solvent contaminated waste water, and is irrelevant to the use of solvents in oil and gas wells as claimed. Although Wipf AG discloses a solvent composition that includes acetic acid, that acid appears to be part of the fluid being treated (as noted in the abstract) and is neutralized by addition of sodium carbonate. The acid also appears to be present in very small amounts, about 0.2% according to page 2, line 28. Claim 1 now includes the limitation of at least 5% by weight acid. Nothing in Wipf discloses or suggests such an amount of acid. The

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remaining uncancelled claims are patentable at least for the reason that they depend on claim 1.

Claims 9, 11-17, 19 and 22 are rejected under 35 USC 103 as being unpatentable over Wipf AG and further in view of Boehm. Applicants respectfully traverse this rejection. Wipf AG deals with recovery or recycling of waste solvents in solvent contaminated waste water, and is irrelevant to the use of solvents in oil and gas wells, or a method of use of the solvent, as claimed. Boehm does not supply the missing teaching. Wipf AG appears from the abstract to teach removal of acid, rather than addition of acid, while Boehm uses the acid as a flocculant. Their teachings are quite unrelated to each other, and not combinable. Further, as noted above, Wipf AG teaches removing a very small amount of acid, while Boehm teaches an acid amount of less than 1% (examples I and II, col. 12), hence neither separately nor together can teach the invention as claimed. These teachings are not combinable and do not yield the invention as claimed.

Claims 1 and 6-18 are rejected under 35 USC 103 as being unpatentable over Qu et al (Qu). Applicants respectfully traverse this rejection. Claims 7, 15 and 18 are cancelled. Claim 1 is amended to include an acid.

In Qu et al, acid and solvent are injected into the well separately. In the present invention, the solvent system is a combined system of acid and the solvents. This system is unique, and completely different from Qu et al.

The examiner argues that "It is generally *prima facie* obvious to use in combination two or more ingredients that have previously been used separately for the same purpose in order to form a third composition useful for that purpose". That logic is inapplicable to claim 1. The acid and solvent of Qu et al are used for different purposes. In Qu, solvent (alcohols and esters) are used to remove trace hydrocarbon from the water bearing zone. The solvent is pumped in separately of the acid. Once the solvent is pushed in a brine spacer is used and then the acid is pushed in. This is a deliberate separation, used because it has been found difficult to add the acid in any large quantity to the solvent system and still yield beneficial results from the acid treatment.

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There is nothing in Qu et al to suggest combining the acid and solvent, quite the opposite. The present invention solves the problem of adding large quantities of acid to the solvent system, by using the unique combination of claimed solvents.

Hence, Claims 1 and 6, 8-14, 16 and 17 are therefore patentable over Qu.

Claims 2-5 and 19-22 are rejected under 35 USC 103 as being unpatentable over Qu et al (Qu) and further in view of Loomis et al. Applicants respectfully traverse this rejection. Claims 19-22 are cancelled, so this rejection will be dealt with in relation to claims 2-5 as currently presented, and claims 25-27 as newly presented.

In Qu, as noted above in relation to claim 1, solvent (alcohols and esters) is used to remove trace hydrocarbon from the water bearing zone. The solvent is pumped in separately of the acid. Once the solvent is pushed in a brine spacer is used and then the acid is pushed in.

Loomis is using an acid (hydrophilic) and a high aromatic (hydrophobic) solvent to carry out acidization. Loomis uses a third phase (ketone and alcohol) to bridge the two phases to create a conventional mutual solvent. The acid does the work on the water soluble rock, the aromatic solvent does work on the hydrocarbon covering the rock, but the bridging solvent keeps the two immiscible fluids from separating.

The teaching of Loomis is therefore not combinable with the teaching of Qu, because Qu teaches separate acid and solvent treatments, while Loomis teaches combining an acid with an aromatic solvent, which is not present in Qu.

Further, in claim 2, the solvent system comprises an alcohol, ester, aqueous acid and ketone or ether in acidization of a well. There is no motivation in either Loomis or Qu to include the ketone from Loomis in the composition of Qu. As indicated, the ketone in Loomis is included to bridge between the acid and aromatic solvent. However, in Qu, there is no aromatic solvent. Hence, there is no motivation to modify Qu to obtain the present invention.

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Further, the solvent system as claimed in either claim 2 or claim 24 includes hydrophilic components, quite unlike Loomis, which requires a hydrophobic solvent. It is not at all clear that combining the hydrophobic solvent of Loomis with the solvent system of claim 2 or claim 24 would yield useful results.

Thus, an attempt to combine the teachings of Qu with the teachings of Loomis to yield the invention of claim 2 or 24 would need to ignore the separate acid/solvent treatment of Qu and the presence of hydrophobic solvent in Loomis. It is not permissible to manipulate the teachings of cited references in such a way. To do so is to use the applicants' own teachings to modify the references.

Accordingly, claims 2-5, and indeed all claims, are believed to be patentable over Qu in view of Loomis.

Reconsideration and withdrawal of the rejections, and allowance of the claims, is respectfully requested.

Respectfully submitted, and certified as being faxed to the USPTO on Aug. 19/06.

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